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EXAMINER	
FLORES, LEON	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,859	HERZBERG, HANAN	
	Examiner	Art Unit	
	Leon Flores	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☒ Claim(s) *10 and 42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Response to Remarks

Independent claim 1

The applicant asserts that *"claim 1 was amended to require determining an information content of one or more signals transmitted between the end, modems, responsive to the collected signals. This is not taught or suggested by Van Den Brink, which only mentions use of a level detector 5, such as a spectrum analyzer or an rms,.vo!tmeter (paragraph. [0090]). These may be used to evaluate noise levels, not to determine information content of signals transmitted between the end modems."*

The examiner disagrees. These devices may also be used to measure information content. However, taking the contrary, the examiner has issue a new ground of rejection based on the new limitation presented by the applicant.

In regards to claim 7, please see new ground of rejection.

In regards to claim 9, please see new ground of rejection.

Obviousness rejections – Zuranski

The applicant asserts that *"Van Den Brink relates to modem testing apparatus connected to a test loop between a pair of modems under test: Zuranski, on the other hand, relates to a set of modems (col. 4, lines 24-37). The Examiner has not given any*

motivation or teaching in the art to perform modem acts in the modem testing apparatus of Van Den Brink, which relates solely to testing based on noise impairments. As CPU 9 of Van Den Brink is connected to the tested modems 6 and 7, it is clear that if Van Den Brink would want to perform any of the tests of Zuranski, they would be performed by tested modems 6 and 7 and not through voltage probe 4. Thus, even if Zuranski and Van Den Brink were combined; they would not result in performing the acts of dependent claims 10-12,14-18, 20-25 and 27, as these acts would be performed by the tested end modems."

The examiner agrees. However, the examiner was able to combine the teachings of Zuranski with another reference.

The applicant asserts that *"Applicants respectfully traverse the rejection and submit that the Examiner has not established a prima facie rejection, as Zuranski does not teach or suggest providing information on effects in upper layers caused by the noise levels on the connection. Zuranski (col, 8, lines 15-25) describes error correction methods used by modems to identify errors or Zuranski does not teach or suggest matching effects in upper layers with noise levels at specific times. All Zuranski suggests is determining whether there was an error on the line."*

The examiner disagrees. One skilled in the art would know that if the received signal is received with error, then this would mean that this error was caused by channel impairments. However, in regards to the "matching" limitation the examiner has issue a new ground of rejection.

In regards to claim 12, please see new ground of rejection.

In regards to claim 27, please see new ground of rejection.

In regards to claim 18, please see new ground of rejection.

Claims 13 and 19

In regards to claim 13, please see new ground of rejection.

In regards to claim 19, please see new ground of rejection.

Claim 26

In regards to claim 26, please see new ground of rejection.

Claim 28

In regards to claim 28, please see new ground of rejection.

Independent claim 30

In regards to claim 30, please see new ground of rejection.

Independent claim 33

In regards to claim 33, please see new ground of rejection.

In regards to claim 34, please see new ground of rejection.

Claim Objections

2. Claim 10 is objected to because of the following informalities: Claim 10 recites limitations, "matching" which is not disclosed or suggested in the specifications. For the purpose of art considerations on its merits, claim 10 will be given its broadest reasonable interpretation. Appropriate correction is required.

Claim 42 is objected to because of the following informalities: It is not clear as to what the applicant is contemplating with the limitation of "without relation to the collection of the signals to the line interface". For the purpose of art considerations on its merits, claim 42 will be given its broadest reasonable interpretation. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims (1-2, 8, 10, 39, 43) are rejected under 35 U.S.C. 102(b) as being anticipated by Webster et al (hereinafter Webster) (US Patent 5,425,052).**

Re claim 1, Webster discloses a method of analyzing the performance of a modem connection, comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig. 4 or 22 & col. 2, lines 26-51); collecting signals passing on the communication link, between the end modems, through the line interface (See fig. 4 or 22 & col. 2, lines 26-51); determining, by a processor, an information content of one or more signals transmitted between the end modems responsive to signals collected through the line interface (See fig. 4 or 22 & col. 2, lines 26-51); and displaying information on the modem connection, responsive to the determined information content. (See fig. 4 or 22 & col. 1,

lines 27-31.)

Re claim 2, Webster further discloses wherein the modem connection comprises a full-duplex modem connection. (See title)

Re claim 8, Webster further discloses, wherein displaying information on the modem connection comprises providing information on noise levels on the connection. (See col. 1, lines 26-33)

Re claim 10, Webster further discloses, wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times. (See col. 2, lines 62-66)

Re claim 39, Webster further discloses, wherein determining the information content on one or more signals comprises determining a bit content. (See fig. 4 or 22 & col. 2, lines 26-51)

Re claim 43, Webster further discloses, wherein the processor is not connected to the end modems other than through the line interface. (See fig. 4)

5. Claims (1, 8) are rejected under 35 U.S.C. 102(b) as being anticipated by Imamura (US Patent 5,768,312).

Re claim 1, Imamura discloses a method of analyzing the performance of a modem connection, comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig. 1: 1); collecting signals passing on the communication link, between the end modems, through the line interface (See fig. 1 & col. 5, line 54 – col. 6, line 5); determining, by a processor, an information content of one or more signals transmitted between the end modems responsive to signals collected through the line interface (See fig. 9 & col. 48-51); and displaying information on the modem connection, responsive to the determined information content. (See fig. 9 & col. 59-61)

Re claim 8, Imamura further discloses wherein displaying information on the modem connection comprises providing information on noise levels on the connection. (See col. 1, lines 26-33 & col. 2, lines 62-66)

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims (33-38) are rejected under 35 U.S.C. 102(e) as being anticipated by Downey (US Patent 6,690,720 B1).

Re claim 33, Downey discloses a method of forcing a retrain on a modem connection, comprising: determining at least one first frequency band to be disrupted (See fig. 1: 22 & col. 5, lines 1-7 & claim 2); and connecting to a communication line carrying the modem connection, between two end modems, a circuit which disrupts transmission of signals on the at least one first frequency band. (See fig. 1: 22)

Re claim 34, Downey further discloses that wherein determining the at least one first frequency band to be disrupted comprises determining a frequency band including a pilot tone frequency band of the modem connection. (See fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19)

Re claim 35, Downey further discloses that, wherein the circuit disrupts the first frequency band substantially without interfering with signals of a second frequency band. (See col. 2, lines 39-41)

Re claim 36, Downey further discloses that, wherein the second frequency band comprises a frequency band of voice signals. (See col. 6, lines 7-10. It is very well known in the art that the xDSL family of modems comprises voice band modem connection.)

Re claim 37, Downey further discloses that, wherein connecting the disruption circuit comprises connecting a circuit which shorts the at least one first frequency band without shorting the second frequency band. (In Downey, see col. 2, lines 39-41. One skilled in the art would know that one way to inject noise is to short the line.)

Re claim 38, Downey further discloses that, wherein connecting the disruption circuit comprises connecting a circuit which injects noise at the at least one first frequency band. (See fig. 1: 22 & col. 5, lines 1-7 & claim 2 & col. 2, lines 39-41)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims (1-2, 8, 39, 43) are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al (hereinafter Webster) (US Patent 5,425,052).**

Re claim 1, Webster discloses a method of analyzing the performance of a modem connection, comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig. 4 or 22 & col. 2, lines 26-51); collecting signals passing on the communication link, between the end modems, through the line interface (See fig. 4 or 22 & col. 2, lines 26-51);

determining, by a processor, an information content of one or more signals transmitted between the end modems responsive to signals collected through the line interface (See fig. 4 or 22 & col. 2, lines 26-51).

But the reference of Webster fails to explicitly disclose displaying information on the modem connection, responsive to the determined information content.

However, in another embodiment (figure 1), Webster discloses a signal monitoring device, such as an oscilloscope, coupled between user A and user B. (See fig. 1 & col. 1, lines 27-31)

Therefore, it would have been obvious to one of ordinary skills in the art to have incorporated this feature into the system of Webster, as taught in figure 1, for the benefit of monitoring and observing the signals flowing through the link.

Re claim 2, Webster further discloses wherein the modem connection comprises a full-duplex modem connection. (See title)

Re claim 8, Webster further discloses, wherein displaying information on the modem connection comprises providing information on noise levels on the connection. (See col. 1, lines 26-33)

Re claim 10, Webster further discloses, wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times. (See col. 2, lines 62-66)

Re claim 39, Webster further discloses, wherein determining the information content on one or more signals comprises determining a bit content. (See fig. 4 or 22 & col. 2, lines 26-51)

Re claim 43, Webster further discloses, wherein the processor is not connected to the end modems other than through the line interface. (See fig. 4)

10. **Claims (3, 7, 9-12, 14-19, 24-25, 28-32, 40-42, 44) are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al (hereinafter Webster) (US Patent 5,425,052), as applied to claim 1 above, and further in view of Downey (US Patent 6,690,720 B1).**

11. Re claim 3, the reference of Webster fails to disclose that wherein the modem connection comprises an ADSL modem connection.

However, Downey does. (See col. 6, lines 7-10) In the same field of endeavor, Downey discloses a system for testing modem training between two modems. The system is particularly suited for testing Digital Subscriber line Access Multiplexer equipment, but it can be applied for testing any analog or digital modem, including the various types of Digital Subscriber Loop (xDSL) equipment.

Therefore, taking the combined teachings of Webster and Downey as a whole. It would have been obvious to one of ordinary skills in the art to have modify the system of Wester, in the manner as claimed and as taught by Downey, for the benefit of providing

high transmission speeds for video and voice to homes over ordinary copper telephone wires, which is well known in the art.

Re claim 7, the combination of Webster and Downey further discloses wherein displaying information on the modem connection comprises displaying the contents of one or more modem negotiation signals. (In Downey, see fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19)

Re claim 9, the combination of Webster and Downey further discloses wherein providing information on noise levels on the connection comprises suggesting, by the processor, possible sources of the noise. (In Webster, see col. 2, lines 62-66, col. 6, line 65 – line 6. The changes in the wire gauge and bridging line, which are caused by noise on the line, causes the characteristic impedance of the line to be non-constant.)

Re claim 10, the combination of Webster and Downey further discloses, wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times. (In Webster, see col. 2, lines 62-66)

Re claim 11, the combination of Webster and Downey further discloses determining, by the processor, information on the symbol mapping used by the connection, responsive to the collected signals. (In Downey, see col. 2, lines 15-17.

"Modem configuration data")

Re claim 12, the combination of Webster and Downey further discloses, wherein displaying information on the modem connection comprises displaying information on signaling signals transmitted in parallel to data transmission. (In Downey, see fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19)

Re claim 14, the combination of Webster and Downey further discloses injecting through the line interface noise which forces a retrain of the modem connection. (In Downey, see fig. 3 & col. 5, lines 1-7)

Re claim 15, the combination of Webster and Downey further discloses injecting the noise comprises injecting noise in a manner which does not substantially interfere with a different connection passing on the communication link. (In Downey, see col. 2, lines 39-41)

Re claim 16, the combination of Webster and Downey further discloses that, wherein injecting the noise comprises connecting a low impedance circuit, for at least some of the frequency bands carrying signals, to the communication link. (In Downey, one skilled in the art would know that one way to inject noise is by connecting a low impedance circuit into the line.)

Re claim 17, the combination of Webster and Downey further discloses the modem connection comprises a DSL connection. (In Downey, see col. 6, lines 7-10)

Re claim 18, the combination of Webster and Downey further discloses that, wherein the injected noise does not interfere with voice frequency bands of the communication link. (In Downey, see col. 2, lines 39-41)

Re claim 19, the combination of Webster and Downey further discloses the modem connection comprises a voice band modem connection. (In Downey, see col. 6, lines 7-10. It is very well known in the art that the xDSL family of modems comprises voice band modem connection.)

Re claim 24, the combination of Webster and Downey further discloses identifying data retransmissions and providing suggested causes of the data retransmissions. (In Downey, see col. 5, lines 1-6. Furthermore, this is well known in TCP.)

Re claim 25, the combination of Webster and Downey further discloses that, wherein displaying information on the determined characteristics comprises displaying a raw bit content of signals transmitted on the modem connection. (In Downey, see fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19)

Re claim 28, Webster & Downey discloses a modem connection performance analyzer, comprising: a line interface adapted to collect signals of a modem connection passing on a communication link, between two end modems connected to the link (In Webster, see fig. 4 or 22 & col. 2, lines 26-51); a processor adapted to determine an information content of one or more signals passing on the modem connection, responsive to the collected signals (In Webster, see fig. 4 or 22 & col. 2, lines 26-51) ; and a human interface adapted to provide information on the determined information content. (In Downey, see fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19 & see col. 1, lines 26-38)

Re claim 29, the combination of Webster and Downey further discloses that, comprising a low impedance shorting circuit adapted to short at least some of the frequencies of the communication link, responsive to a command from the processor. (In Downey, see fig. 1: 8. One skilled in the art would know that one way to inject noise is by connecting a low impedance circuit into the line.)

Re claim 30, the combination of Webster and Downey further discloses a method of monitoring an xDSL modem connection, comprising: connecting a line interface to a communication link carrying signals of an xDSL modem connection, between a pair of end modems separate from the line interface (In Downey, see fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19 & col. 6, lines 7-10); collecting signals passing between the end modems on the communication link, through the line interface, by a performance

analyzer, during a collection session in which signals are not injected by the performance analyzer onto the communication link (In Webster, see fig. 4), except possibly noise adapted to cause a retrain, injected at specific times (In Downey, see fig. 3 & col. 5, lines 1-22); and providing information on the modem connection, responsive to the collected signals. (In Webster, see fig. 4 or 22 & col. 2, lines 26-51)

Re claim 31, the combination of Webster and Downey further discloses that, wherein providing information on the modem connection comprises providing information on the operation of the connection. (In Downey, see col. 5, lines 12-16)

Re claim 32, the combination of Webster and Downey further discloses that, wherein providing information on the operation of the modem connection comprises providing data passing on the connection. (In Downey, see fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19)

Re claim 40, the combination of Webster and Downey further discloses that, comprising determining a stage of the modem connection, responsive to the collected signals. (In Webster, see col. 2, lines 26-42)

Re claim 41, the combination of Webster and Downey further discloses that, wherein the only modem tangible signals transmitted on the connection during the

collection of the signals through the line interface are generated by the end modems. (In Webster, see fig. 4)

Re claim 42, the combination of Webster and Downey further discloses that, wherein at least some of the signals collected through the line interface are generated without relation to the collection of the signals to the line interface. (In Downey, see fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19)

Re claim 44, the combination of Webster and Downey further discloses that, wherein collecting signals passing on the communication link comprises collecting during a collection session in which signals are not injected through the line interface onto the communication link (In Webster, see fig. 4), except possibly noise adapted to cause a retrain, injected at specific times. (In Downey, see fig. 3 & col. 5, lines 1-22)

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al (hereinafter Webster) (US Patent 5,425,052), as applied to claim 1, and futher in view of Poletto et al. (hereinafter Poletto) (US Patent 7,213,264 B2)

Re claim 40, the reference of Webster fails to specifically disclose determining a stage of the modem connection, responsive to the collected signals.

However, Poletto does. (See fig. 7 & col. 6, line 57 – col. 7, line 2) Poletto discloses a device used to collect statistical information on packets that are sent

between the network and the data center and to determine from the collected information whether the data center is under a denial of service attack.

Therefore, taking the combined teachings of Webster and Poletto as a whole. It would have been obvious to one of ordinary skills in the art to have incorporated this feature into the system of Webster, in the manner as claimed and as taught by Poletto, for the benefit of thwarting denial of service attacks. (See col. 1, line 57)

12. **Claims (4-6) are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al (hereinafter Webster) (US Patent 5,425,052), as applied to claim 1 above, and further in view of Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1)**

13. Re claim 4, the reference of Webster fails to teach that wherein connecting the line interface to the communication line comprises connecting at a point at least two times closer to one of the modems than the other modem.

However, Van Den Brink does. (See fig.1) Van discloses the line interface being placed at a specific placed at a distance closer to one of the modems, and farther away from the other modem. Furthermore, when a base station decides to conduct a number of tests between two or more modem, one of the modems may be closer to the line interface than the other modem in order to analyze at a close distance the signals being transmitted from that particular modem.

Therefore, taking the combined teachings of Webster and Van Den Brink as a whole. It would have been obvious to one of ordinary skills in the art to have placed the

line interface closer to one of the modems in the system of Downey, for the benefit of obtaining compensation for any restrictions associated with the transmission of signals into the line.

Re claim 5, the combination of Webster and Van Den Brink further discloses that wherein connecting the line interface to the communication line comprises connecting at a point at most two times closer to one of the modems than to the other modem. (This claim has been analyzed and rejected in view of claim 4 above.)

Re claim 6, the combination of Webster and Van Den Brink further discloses that, wherein collecting signals passing on the communication link comprises collecting without sending to either of the modems acknowledgment signals or any other modem tangible signals. (In Van Den Brink, see fig. 1 & paragraph 93. The line interface is placed in between the two modems. Its function is to analyze the quality/characteristics of the line by measuring/examining the signals flowing through the line. Furthermore, one skilled in the art would know that it doesn't need to send any acknowledgement or signals to any of the modems at each end.)

14. **Claims (9, 20-23) are rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura (US Patent 5,768,312), as applied to claim 1 above, and further in view of Zuranski et al. (hereinafter Zuranski) (US Patent 6,445,733 B1)**

Re claim 9, the reference of Imamura further discloses that wherein providing information on noise levels on the connection comprises (See fig. 3 & col. 6, lines 37-67).

But the reference of Imamura fails to specifically disclose suggesting, by the processor, possible sources of the noise.

However, Zuranski does. (See col. 14, line 63 – col. 15, line 5) In the same field of endeavor, Zuranski discloses a digital subscriber line modem that characterizes the subscriber line under a variety of conditions. The digital subscriber line modem includes a control circuit which performs rapid retrain operation utilizing line characteristic information.

Therefore, taking the combined teachings of Imamura and Zuranski as a whole. It would have been obvious to one of ordinary skills in the art to have included this step of listening to the received signal which reveal noise sources into the system of Imamura, as taught by Zuranski, for the benefit of determining the line characteristics.

Re claim 20, the combination of Imamura and Zuranski further discloses identifying changes in the operation of the modem connection responsive to signals collected through the line interface (In Imamura, see fig. 3 & col. 6, lines 37-67) and providing suggested causes of the changes. (In Zuranski, see col. 14, line 63 – col. 15, line 5)

Re claim 21, the combination of Imamura and Zuranski further discloses identifying changes comprises identifying a retrain. (In Zuranski, see col. 9, lines 13-20)

Re claim 22, the combination of Imamura and Zuranski further discloses identifying changes comprises identifying a bit swap. (In Zuranski, see col. 9, lines 13-20)

Re claim 23, the combination of Imamura and Zuranski further discloses providing suggested causes of the changes comprises identifying, for at least one change, a noise that caused the change. (In Zuranski, see col. 14, line 63 – col. 15, line 5)

15. Claims (10, 24) are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al (hereinafter Webster) (US Patent 5,425,052), as applied to claim 1 above, and further in view of Zhang et al. (hereinafter Zhang) (US Patent 6,775,240 B1)

Re claim 10, the reference of Webster fails to specifically disclose that wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times.

However, Zhang does. (See abstract & col. 1, lines 18-61, col. 5, lines 49-52) Zhang discloses a test analyzer that determines quality of service, such as Bearer Delay, Cell or Packet loss, Echo delay, and Echo amplitude, some of which are directed

to the particular impairments that are characteristic of packet networks. Furthermore, a network performance analyzer is capable of measuring parameters such as loss, noise, delay, and distortion of various types. One skilled in the art would know that these parameters are measured in order to compensate for the channel impairments.

Therefore, taking the combined teachings of Webster and Zhang as a whole. It would have been obvious to one of ordinary skills in the art to have incorporated these features into the analyzer of Webster, as taught by Zhang, for the benefit of determining the quality of service.

Re claim 24, the combination of Webster and Zhang further discloses identifying data retransmissions and providing suggested causes of the data retransmissions. (In Zhang, see abstract. Furthermore, it is well known in the art that retransmission of data will occur if there is a loss of packet, which is well in known in TCP.)

16. Claims (13, 20-23, 26-27, 39) are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al (hereinafter Webster) (US Patent 5,425,052), as applied to claim 1 above, and further in view of Conklin et al. (hereinafter Conklin)(US Patent 5,991,881)

Re claim 26, Webster discloses a method of analyzing the performance of a modem connection comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig. 4 or

22 & col. 2, lines 26-51); collecting signals passing on the communication link, between the end modems, through the line interface (See fig. 4 or 22 & col. 2, lines 26-51); analyzing the collected signals (See fig. 4 or 22 & col. 2, lines 26-51).

But the reference of Webster fails to specifically disclose providing a warning on a possible tapping of the communication link, responsive to the analysis.

However, Conklin does. (See figs. 1-3, 6 & col. 5, lines 5-7) Conklin discloses a system for network surveillance and detection of attempted intrusions. The system is comprised of a network observation, intrusion detection, alert notification, evidence logging, and an incident analyzer/reporter.

Therefore, taking the combined teachings of Webster and Conklin as a whole. It would have been obvious to one of ordinary skills in the art to have incorporated this feature into the system of Webster, in the manner as claimed and as taught by Conklin, for the benefit of preventing attempted intrusion into the network. (See abstract)

Re claim 27, the combination of Webster and Conklin further discloses that, comprising extracting the data transmitted on the modem connection from the signals collected through the line interface. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 13, the combination of Webster and Conklin further discloses performing signal tests on test signals collected through the line interface and comparing the results of the tests to negotiation signals, collected through the line

interface, reporting test results from one of the modems. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 20, the combination of Webster and Conklin further discloses identifying changes in the operation of the modem connection responsive to signals collected through the line interface and providing suggested causes of the changes. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 21, the combination of Imamura and Conklin further discloses identifying changes comprises identifying a retrain. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 22, the combination of Webster and Conklin further discloses identifying changes comprises identifying a bit swap. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 23, the combination of Webster and Conklin further discloses providing suggested causes of the changes comprises identifying, for at least one change, a noise that caused the change. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 39, the combination of Webster and Conklin further discloses, wherein determining the information content on one or more signals comprises determining a bit content. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Flores whose telephone number is 571-270-1201. The examiner can normally be reached on Mon-Fri 7-5pm Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LF
June 4, 2007

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